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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,555	02/17/2006	Torsten Solf	DE03 0300 US1	6462

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EXAMINER	
CRAWLEY, KEITH L	

ART UNIT	PAPER NUMBER
4193	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/568,555	SOLF ET AL.	
	Examiner	Art Unit	
	KEITH CRAWLEY	4193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 2/17/06.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 6, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Ham (US 2003/0117131 A1).

Regarding claim 1, Ham ('131) discloses a method of calibrating an arrangement for driving image-reproducing means subject to inertia, and particularly liquid crystal displays, wherein a stored correcting variable is added to infed video signals to compensate for the effects of inertia (fig. 11, data modulator 112, fig. 12, look-up table 124, see also ¶ 68, data is modulated for optimizing a response speed), which correcting variable depends on changes in the video signals from frame to frame (fig. 12 and ¶ 68, modulation depends upon current frame Fn and previous frame Fn-1), and wherein the corrected video signals are conveyed to the image-reproducing means (fig. 11, lcd panel 117 receives RGB VMdata via data driver), characterized in that a test pattern is

generated that contains signal jumps that occur from frame to frame (fig. 6, pattern generator 62, see also ¶ 49), the signal jumps vary in respect of their sign, their size and their position in the amplitude range of the video signals (figs. 7A and 7B, see also ¶ 50), the test video signals are shown on the image-reproducing means at least in a part that is covered by at least one opto-electrical sensor (fig. 5, image-reproducing means 52 and opto-electrical sensor 53), and correcting parameters are derived from the signals generated by the at least one opto-electrical sensor (fig. 8) while taking account of the totality of the signals generated by the at least one opto-electrical sensor (fig. 5, see also ¶ 48).

Regarding claim 2, Ham ('131) discloses a method as claimed in claim 1, characterized in that, of all the possible signal jumps, only selected ones are used as datum values for forming the test pattern (fig. 8, also ¶ 54, the three-level patterns are generated, then a sample image is displayed on the lcd panel).

Regarding claim 6, Ham ('131) discloses a method as claimed in claim 1, characterized in that, to allow the correcting variable to be formed, there is provided a model of the image-reproducing means that contains the correcting parameters (fig. 8 and fig. 13, specifically ¶ 72, "A modulating data automatically established by the modulating data generating algorithm... may be stored in the look-up table), which model has a state variable as an output variable (fig. 8 and fig. 13, specifically ¶ 72, "The look-up table may replace the source data by the

modulating data to modulate the source data), the video signals as a first input variable (fig. 13, Fn) and the state variable from a previous frame as a second input variable (fig. 13, Fn-1) and, also to allow the correcting variable to be derived, a table is used (fig. 13, look-up table 134) that has the infed video signals and the state variable from the previous frame as input variables (fig. 13, Fn and Fn-1, see also ¶ 72, the modulating data established in fig. 8 is stored within the look-up table) and the corrected video signals as an output variable (fig. 13, RGB MData Out).

Regarding claim 7, Ham ('131) discloses a method as claimed in claim 1, characterized in that, to allow the correcting variable to be formed, there is provided a table that contains the correcting parameters (fig. 12, look-up table 124), which table has the infed video signal (fig. 12, Fn) and the video signal for the previous frame (fig. 12, Fn-1) as input variables and the correcting variable as an output signal (fig. 12, modulated data MData Out).

Regarding claim 8, Ham ('131) discloses a method as claimed in claim 1, characterized in that, during the showing of video signals of any desired kind on the image-reproducing means, the signals generated by the opto-electrical sensor are compared with the video signals of any desired kind (fig. 8, S83-S85, see also ¶ 55-56), and in that a calibration is performed if there are wide deviations in respect of time response (fig. 8, S86-S87, also ¶ 57-58).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ham ('131) in view of Tamura (US 7,098,902).

Regarding claims 3 and 4, Ham ('131) fails to disclose that the calibration takes place each time the image-reproducing means is switched on; and that the calibration is repeated at preset intervals of time.

Tamura teaches that the calibration takes place each time the image-reproducing means is switched on (col. 6, line 24-31, "display characteristic control parameters can be obtained by measuring the display characteristics of the display panel", these parameters are written to memory; see also col. 7, line 1-5, the control parameters are read out from memory at "power-on", thus calibration can take place); and that the calibration is repeated at preset intervals of time (col. 7, line 27-30, control parameters are read out from memory at a "given refresh timing").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the lcd display and driving method

of Ham ('131) with the display driver and driving method of Tamura since such a modification "ensures that it is possible to always maintain the display characteristics of the display panel at optimal levels (col. 7, line 33-35)".

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ham ('131) in view of Tamura as applied to claims 3 and 4 above, and further in view of Ham (US 7,106,287), hereinafter referred to as Ham ('287).

Regarding claim 5, neither Ham ('131) nor Tamura discloses the temperature of the image-reproducing means is measured at at least one point thereon and is stored at the time of a calibration, and in that a further calibration is performed if there are changes in the measured temperature that exceed a preset threshold value.

Ham ('287) teaches the temperature of the image-reproducing means is measured at at least one point thereon (fig. 5, temperature sensor 58, also col. 6, line 39-43) and is stored at the time of a calibration (fig. 5, temperature T is input into data modulator), and in that a further calibration is performed if there are changes in the measured temperature that exceed a preset threshold value (fig. 7, S72-73, see also col. 8, line 13-18; if a change in temperature exceeds the range of a look-up table, a further calibration is performed, see also col. 7, line 45-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the display and driving method of

Ham ('131) and Tamura with the driving method of Ham ('287) since such a modification "is used to maintain a consistent response time even though operating temperatures change or physical properties of the lcd change due to temperature" (col. 8, line 39-41).

6. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ham ('131) in view of Brabander et al. (US 6,950,098).

Regarding claims 9-12, Ham ('131) discloses an arrangement for calibrating an arrangement for driving image-reproducing means subject to inertia, and particularly liquid crystal displays, wherein a stored correcting variable is added to infed video signals to compensate for the effects of inertia (fig. 11, data modulator 112, fig. 12, look-up table 124, see also ¶ 68, data is modulated for optimizing a response speed), which correcting variable depends on changes in the video signals from frame to frame (fig. 12 and ¶ 68, modulation depends upon current frame Fn and previous frame Fn-1), wherein the corrected video signals are conveyed to the image-reproducing means (fig. 11, lcd panel 117 receives RGB VMdata via data driver), and wherein at least one opto-electrical sensor detects at least a part of a test pattern that is shown on at least a part of the image area of the image-reproducing means (fig. 5, image-reproducing means 52 and opto-electrical sensor 53). Ham ('131) fails to disclose that the at least one opto-electrical sensor is arranged at the edge of the image-reproducing means; the at least one opto-electrical sensor is arranged

outside the image area of the image-reproducing means and an optical means is provided to guide the light from the image area to the opto-electrical sensor; the at least one opto-electrical sensor is pivotable; and a plurality of opto-electrical sensors are arranged at different points at the edge of the image area.

Brabander teaches that the at least one opto-electrical sensor is arranged at the edge of the image-reproducing means (fig. 1A and 1B, optical sensor unit 10 at the edge of lcd panel 2); the at least one opto-electrical sensor is arranged outside the image area of the image-reproducing means (fig. 4, light sensor 22 outside of active display area 6) and an optical means is provided to guide the light from the image area to the opto-electrical sensor (fig. 4, light guide 34, see also fig. 5 and col. 7, line 24-47); the at least one opto-electrical sensor is pivotable (col. 8, line 48-52, the light guide can be rotated in a plane parallel to the line connecting the light source and aperture of the light guide, see fig. 8 and 9, also col. 9, line 5-9, optical system can be rotated in a perpendicular direction too); and a plurality of opto-electrical sensors are arranged at different points at the edge of the image area (col. 10, line 5-13, a "combination of sensors" can be used, also a second sensor which points to a non-active border of the display can be used).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the display and driving method of Ham ('131) with the light sensor and light guide of Brabander since such a modification would provide "real time correction, through optical feedback, of light

output" (col. 2 line 25-26) and can be "retrofitted on any existing display devices" (col. 4, line 22-24).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH CRAWLEY whose telephone number is (571)270-7616. The examiner can normally be reached on M-F, 7:30-5:00 EST, alternate Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571)272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Derris H Banks/
Supervisory Patent Examiner, Art Unit 3725

/KEITH CRAWLEY/
Examiner, Art Unit 4193